



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,718	08/09/2001	Douglas Raymond Dykaar	5732	3945

7590 01/16/2004

Dorsey & Whitney LLP,
DANIEL E. FISHER, ESQ.
Suite 300 South
1001 Pennsylvania Avenue, N.W.
Washington, DC 20004

EXAMINER

BARBER, THERESE

ART UNIT	PAPER NUMBER
----------	--------------

2882

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/924,718	Applicant(s) DYKAAR ET AL.	
	Examiner Therese Barber	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 11-21, 23-29 and 32 is/are rejected.
- 7) ☒ Claim(s) 2-10, 22, and 30-31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. This application lacks formal drawings. The informal drawings filed in this application are acceptable for examination purposes. When the application is allowed, applicant will be required to submit new formal drawings.

NOTE: Figure 4 was added to the application on 22 September 2003.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 22 recites the limitations of "the compression ratio" and "the expansion ratio".

There is insufficient antecedent basis for these limitations in the claim 21.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 11-21, 24-27 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al (USPN 5,640,018).

6. Regarding claim 1, Suzuki discloses an apparatus (36) comprised of a sensor (28-30) and a bundle of optical fibers having first and second ends (25-27), wherein the bundle of optical fibers at the first end extends in a first fiber direction and defines a first section plane that is normal to the first fiber direction; the first end defines a first end plane that is obliquely oriented with respect to the first section plane; the bundle of optical fibers at the second end extends in a second fiber direction and defines a second section plane that is normal to the second fiber direction; the second end defines a second end plane that is obliquely oriented with respect to the second section plane; and the sensor is disposed in a confronting relation with the second end (col. 6, line 33 to col. 7, line 7; fig. 3).

Regarding claim 11, Suzuki discloses an apparatus wherein the first fiber direction and the second fiber directions are co-parallel (fig. 3).

Regarding claim 12, Suzuki discloses an apparatus wherein the sensor is a time delay and integrate sensor (col. 5, lines 19-21 and col. 6, lines 25-27).

Regarding claim 13, Suzuki discloses an apparatus comprises a scintillator (45) disposed in a confronting relation with the first end (col. 8, lines 3-5).

Regarding claim 14, Suzuki discloses an apparatus wherein the first fiber direction and the second fiber direction are co-parallel (fig. 3).

Regarding claim 15, Suzuki discloses an apparatus wherein the sensor is a time delay and integrate sensor (col. 5, lines 19-21 and col. 6, lines 25-27).

Regarding claim 16, Suzuki discloses an apparatus comprises a radiation source (39) disposed in a confronting relation with the first end of the bundle of optical fibers (fig. 4).

Regarding claim 17, Suzuki discloses an apparatus comprising a scintillator disposed in a confronting relation with the first end of the bundle of optical fibers, wherein the radiation source is an x-ray source (col. 7, line 31 to col. 8, line 12; figs. 4 and 5).

Regarding claim 18, Suzuki discloses an apparatus wherein the sensor is a time delay and integrate sensor with a sensor control and the sensor control is capable of operating the sensor to image an article disposed between the radiation source and the first end of the bundle of optical fibers that is moving relative and transverse to a radiation axis between the radiation source and the first end of the bundle of optical fibers (col. 7, line 31 to col. 8, line 12; figs. 4 and 5).

Regarding claim 19, Suzuki discloses an apparatus comprising a scintillator disposed in a confronting relation with the first end of the bundle of optical fibers, wherein the radiation source is an x-ray source (col. 7, line 31 to col. 8, line 12; figs. 4 and 5).

Regarding claim 20, Suzuki discloses an apparatus wherein the time delay and integrate sensor is a CCD photodiode array (28-30; col. 7, lines 1-12).

Regarding claim 21, Suzuki discloses an apparatus wherein the bundle of optical fibers are capable of morphing a first format at the first end into a second format at the second ends (col. 6, line 33 to col. 7, line 7; fig. 3).

Regarding claim 24, Suzuki discloses an apparatus wherein the sensor is a time delay and integrate sensor (col. 5, lines 19-21 and col. 6, lines 25-27).

Regarding claim 25, Suzuki discloses an apparatus comprising a scintillator (45) disposed in a confronting relation with the first end (col. 8, lines 3-5).

Regarding claim 26, Suzuki discloses an apparatus wherein the sensor is a time delay and integrate sensor (col. 5, lines 19-21 and col. 6, lines 25-27).

Regarding claim 27, Suzuki discloses an apparatus wherein the first end is non-normal to a fiber direction at the first end and the second end is non-normal to a fiber direction at the second end (fig. 3).

7. Regarding claim 29, Suzuki discloses an apparatus (36) comprised of a radiation generator for generating incident radiation (39); a scintillator (45) disposed in a confronting relation with the radiation generator and formed of a material capable of transforming the incident radiation into a visible light image (col. 7, line 31 to col. 8, line 12; figs. 4 and 5); a fiber optic bundle having a first end disposed in a confronting relation with the scintillator and finished along a plane oriented with respect to a first end fiber direction, wherein the fiber optic bundle also has a second end finished along another plane oriented with respect to a second fiber direction, and the fiber optic bundle having a transmitting region disposed between the first end and the second end (fig. 3); and a time delay and integrate sensor disposed in confronting relation with the second end (col. 5, lines 19-21 and col. 6, lines 25-27). It would be inherent to one having ordinary skill in the art that a display is coupled to the sensor in order to observe the images produced by the apparatus.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2882

9. Claims 23 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki as applied to claims 1 and 21 above, and further in view of Sugawara et al. (USPN 5,550,380).

10. Regarding claims 23 and 28, Suzuki discloses the limitations of claims 1 and 21 as rejected above.

Suzuki fails to disclose an apparatus wherein the first end is defined by a first end plane and the second end is defined by a second end plane which is obliquely oriented with respect to the first end plane.

Sugawara discloses an apparatus for detecting radiation with higher accuracy (col. 1, lines 22-25) wherein the radiation detector is provided with an optical fiber plate (3) wherein the first end is defined by a first end plane and the second end is defined by a second end plane which is obliquely oriented with respect to the first end plane whereby the input and output faces intersect at angle of 45 degrees in accordance with the direction of the waveguide (col. 4, lines 37-45; fig. 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the end planes of the optical fiber bundles as disclosed by Suzuki with the obliquely oriented end planes of the optical fiber bundles as disclosed by Sugawara, in order, to improve the accuracy of detecting x-rays with optical fiber bundles.

11. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki as applied to claim 29 above, and further in view of Sugawara.

12. Regarding claim 32, Suzuki discloses the limitations of claim 29 as rejected above.

Suzuki fails to disclose an apparatus wherein the first end is defined by a first end plane

and the second end is defined by a second end plane which is obliquely oriented with respect to the first end plane.

Sugawara discloses an apparatus for detecting radiation with higher accuracy (col. 1, lines 22-25) wherein the radiation detector is provided with an optical fiber plate (3) wherein the first end defines a first end plane; the second end defines a second end plane; and the second end is oblique with respect to the first end plane whereby the input and output faces intersect at angle of 45 degrees in accordance with the direction of the waveguide (col. 4, lines 37-45; fig. 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the end planes of the optical fiber bundles as disclosed by Suzuki with the obliquely oriented end planes of the optical fiber bundles as disclosed by Sugawara, in order, to improve the accuracy of detecting x-rays with optical fiber bundles.

Allowable Subject Matter

13. Claims 2-10, 22, 30, and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 2-8, the claims would be allowable if rewritten because the prior art fails to disclose or to reasonably suggest an apparatus comprised of a sensor and a bundle of optical fibers wherein the optical fibers are capable of compression and expansion an optical image into two image direction whereby the second image direction is transverse to the first image direction, as set forth in the claimed combination.

Regarding claims 9-10, the claims would be allowable if rewritten because the prior art fails to disclose or to reasonably suggest an apparatus comprised of a sensor and a bundle of

Art Unit: 2882

optical fibers wherein the first line is transverse to the second line or the first line is perpendicular to the second line after the first and second end planes have intersected the second section plane at the first and second lines, as set forth in the claimed combination.

Regarding claim 22, the claim would be allowable if rewritten because the prior art fails to disclose or to reasonably suggest an apparatus comprised of a sensor and a bundle of optical fibers wherein the bundle of optical fibers are capable of morphing into two formats whereby the shapes of the two formats are different.

Regarding claims 30 and 31, the claims would be allowable if rewritten because the prior art fails to disclose or to reasonably suggest an apparatus comprised of a scintillator, a sensor, and a bundle of optical fibers wherein the apparatus is capable of compression in the first image direction and expansion in the second image direction whereby the first image direction is transverse or orthogonal to the second image direction, as set forth in the claimed combination.

Response to Amendment

14. New grounds for rejections of claims 1, 11-21, 23-29, and 32 are listed above. The applicants have cancelled claims 33-36.


Art Unit: 2882


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Therese Barber whose telephone number is (571) 272-2486. The examiner can normally be reached on Monday to Friday from 8:30 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

tb 
11 January 2004


EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER